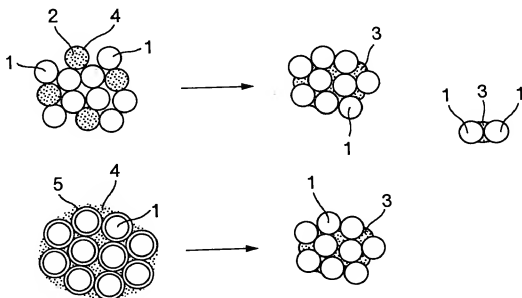


FIG.1



Pb-free solder

FIG.2

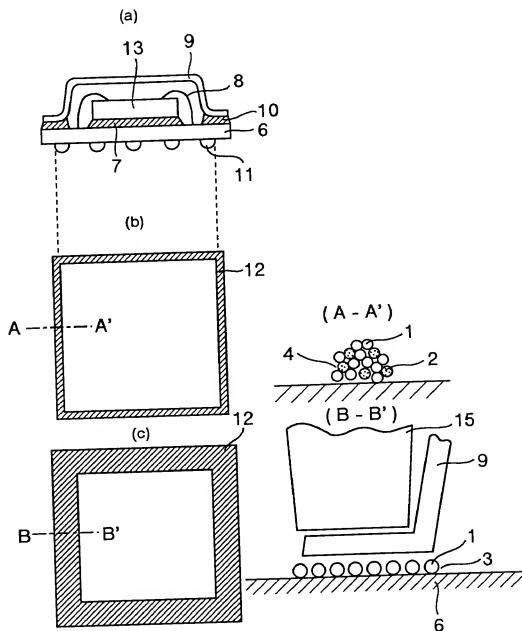
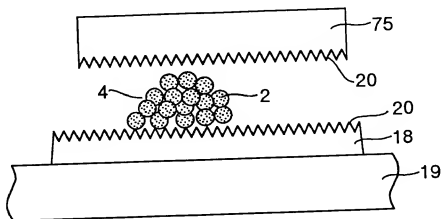


FIG.3

(a)



(b)

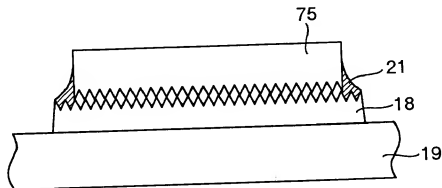


FIG. 4

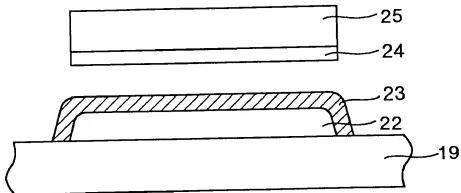
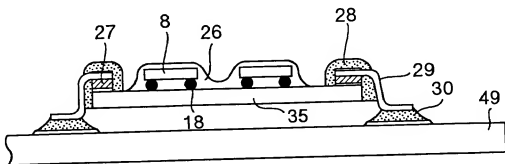
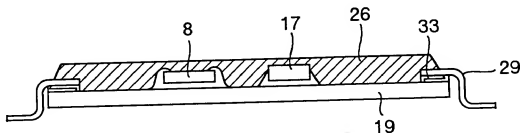


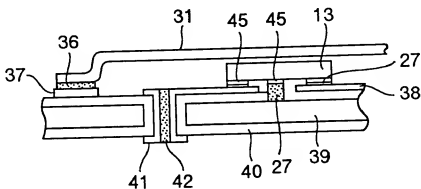
FIG.5



(a)



(b)



(c)

FIG.6

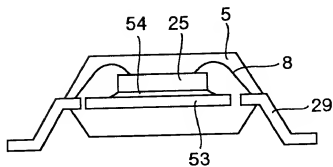
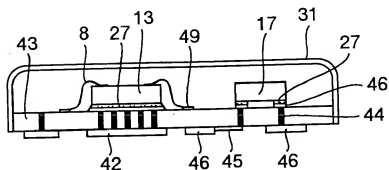
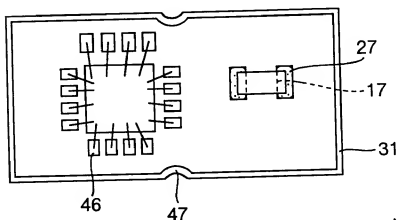


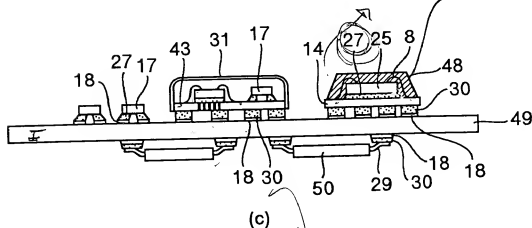
FIG. 7



(a)

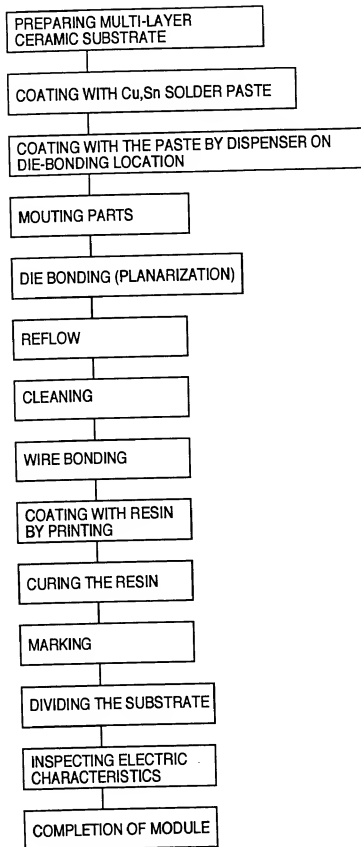


(b)

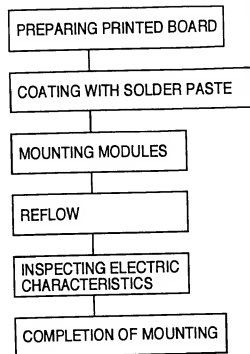


(c)

FIG.8

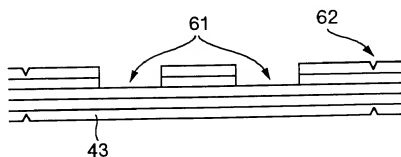


(a) STEPS OF ASSEMBLING MODULE

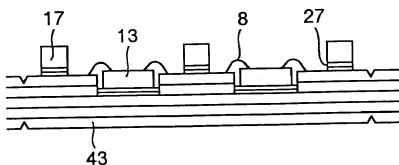


(b) STEPS OF SECONDARY MOUNTING AND ASSEMBLING OF MODULE

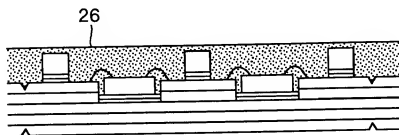
FIG.9



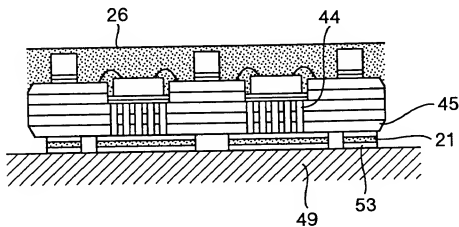
(a)



(b)



(c)



(d)

FIG.10

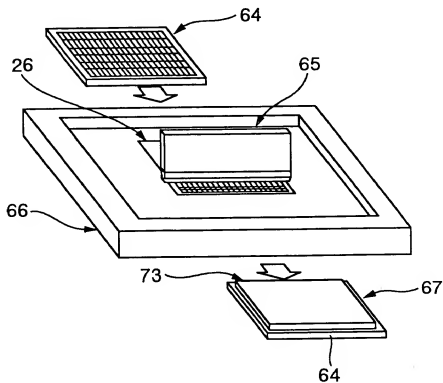


FIG. 11

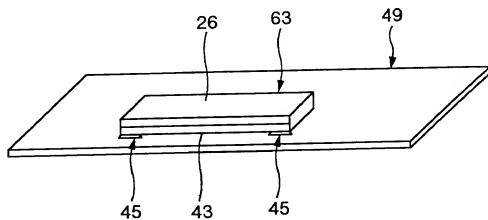
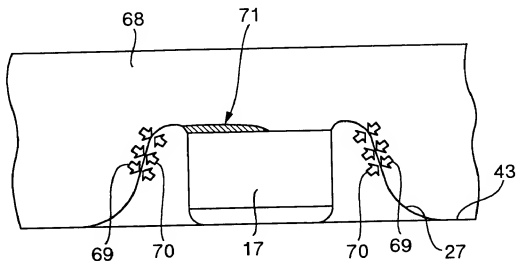
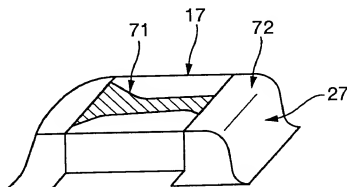


FIG.12



(a)



(b)

FIG.13

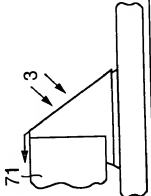
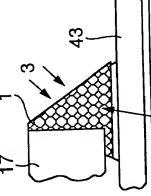

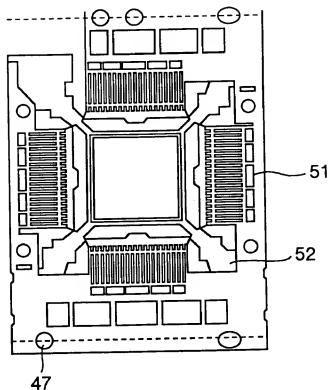
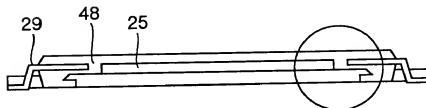
	VOLUME EXPANSION (%) (RATIO)	YOUNG'S MODULUS REQUIRED IN RESIN	PHENOMENON
CONVENTIONAL TECHNIQUE (PB BASED)	3.6 (2.6)	200 Mpa > at 180°C	 <p>71</p> <p>3</p> <p>1</p> <p>CREEP DEFORMATION OF LIQUID (INCLUDING SOLID PHASE) AT THE TIME OF REMELTING</p>
THE INVENTION (Cu50/Sn50)	1.4* (1)	500 Mpa >* at 180°C	 <p>17</p> <p>3</p> <p>43</p> <p>1</p> <p>JOINT IS EXPECTED THAT A BONDED PORTION DOES NOT MOVE BECAUSE Cu PARTICLES ARE FIXED TO EACH OTHER</p>
ASSUMPTION	* 1/2 of THAT OF Sn	* THE VALUE OF CONVENTIONAL TECHNIQUE ABOUT 2.5 TIMES	 <p>74</p> <p>3</p> <p>1</p>

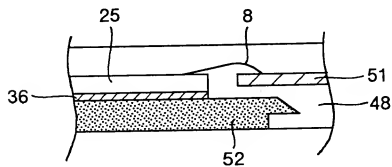
FIG.14



(a)



(b)



(c)

FIG.15

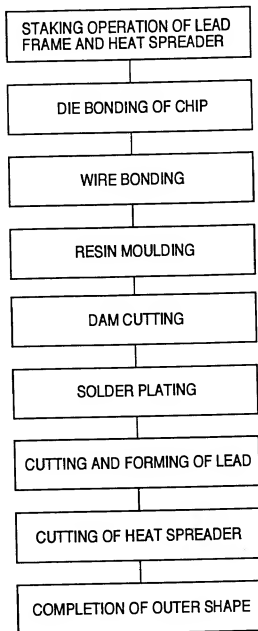


FIG.16

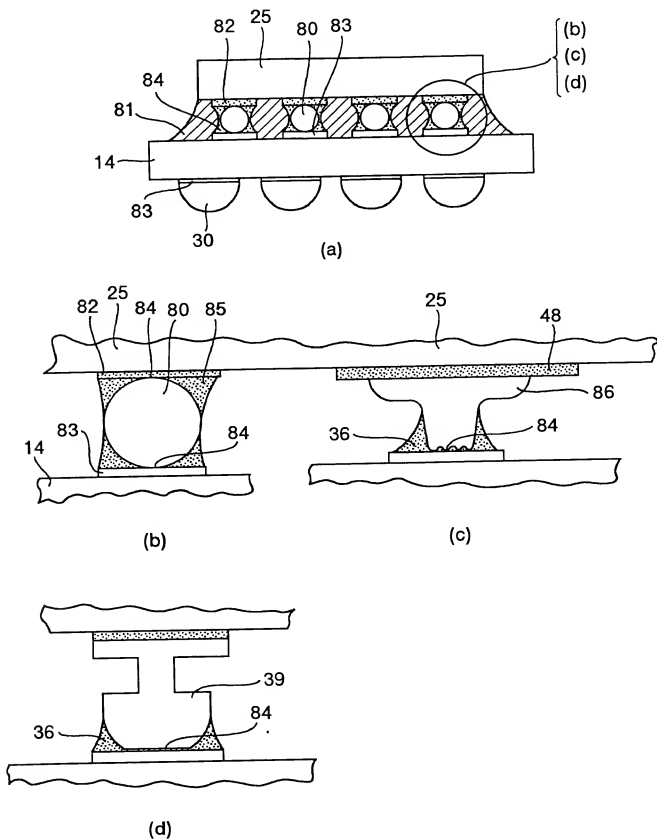
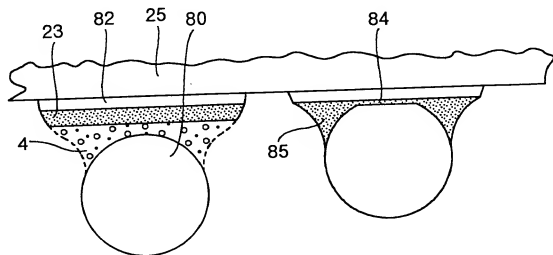
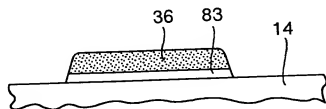


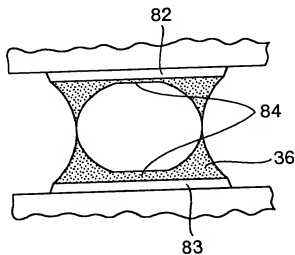
FIG.17



(a)

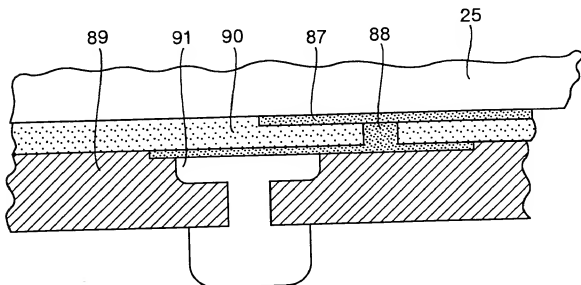


(b)

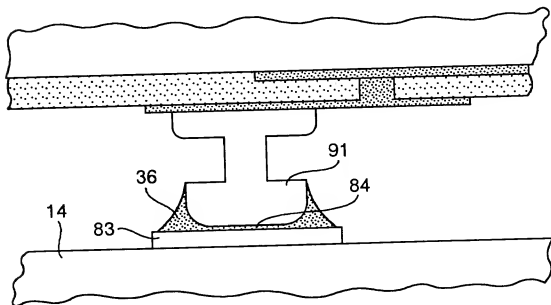


(c)

FIG.18



(a)



(b)

FIG.19

Sn / Cu	EVALUATION AND JUDGING	REASONS FOR JUDGING
10 / 4	×	↑
10 / 5	×	EXCESS OF Sn
10 / 7 (1.43)	△	<div> <div>PROPER RANGE</div> <div>PREFERRED RANGE</div> </div>
10 / 8 (1.25)	△ ~ ○	
10 / 10	○	
10 / 12.5 (0.8)	○	
10 / 15	△ ~ ○	
10 / 16.7 (0.6)	△	
10 / 25	×	SHORT OF Sn
10 / 50	×	↓
10 / 100	×	↓

CRITERION FOR : ○ : PROPER
JUDGING

△ : ALMOST PROPER

×

: SHORT (ON EXCESS) OF Sn